ORDINANCE NO. 12-01-15

AN ORDINANCE OF THE TOWNSHIP OF FRANKSTOWN, BLAIR COUNTY, PENNSYLVANIA, CREATING A STORMWATER MANAGEMENT ORDINANCE TO COMPLY WITH THE COUNTY OF BLAIR APPROVED BEAVERDAM BRANCH WATERSHED ACT 167 STORMWATER MANAGEMENT PLAN AND AMENDING THE FRANKSTOWN TOWNSHIP STORMWATER MANAGEMENT ORDINANCE.

The Supervisors of the Township of Frankstown in accordance with the powers conferred upon them by the Act 247 of 1968, July 31, P.L. 805, as amended, known as the "Pennsylvania Municipalities Planning Code" and further by virtue of and in accordance with the Second Class Township Code, as amended, hereby enact the following ordinance.

BE IT ORDAINED AND ENACTED by the Board of Supervisors of Frankstown Township and it is hereby ordained and enacted by the authority of the same.

ARTICLE 1

GENERAL PROVISIONS

Section 101. Title.

This Ordinance shall be known as the Frankstown Township Stormwater Management Ordinance.

Section 102. Purpose.

This Ordinance is adopted for the following general purposes and objectives:

A. To assure safe management of stormwater runoff resulting from land alteration and disturbance activities in accordance with watershed stormwater management plans adopted pursuant to the Pennsylvania Storm Water Management Act (Act 167 of 1978, as amended).

B. To utilize and preserve the existing natural drainage systems and to preserve and restore the flood-carrying capacity of streams.

C. To encourage recharge of groundwater to preserve groundwater supplies and stream flows where appropriate (NOT INCLUDING SOILS WITH FRAGIPANS).

D. To provide for adequate maintenance of all permanent stormwater management facilities in the Township.

E. To manage accelerated runoff and erosion and sedimentation problems at their source by regulating activities that cause these problems.

F. Meet the National Pollution Discharge Elimination System (hereinafter "NPDES") Small Municipal Separate Storm Sewer System (hereinafter "MS4") permit requirements.

G. Meet the Commonwealth of Pennsylvania water quality requirements.

H. Reduce accelerated erosion, scour, aggradation, and degradation to the Waters of the Commonwealth.

I. Provide procedures and standards for proper operation and maintenance of stormwater management of Best Management Practices (hereinafter "BMPs").

J. To maintain existing flows and quality of streams and watercourses in the Township and the Commonwealth of Pennsylvania.

K. To provide performance standards and design criteria for watershed-wide stormwater management and planning.

L. To protect groundwater and surface water quality.

Section 103. Applicability.

The following activities involving alteration or development of land are deemed to have possible effects upon storm water runoff characteristics and are included within the scope of this Ordinance:

A. Subdivision.

B. Land Development.

C. Construction of new or additional impervious surfaces or surfaces with reduced permeability (driveways, parking lots, etc.).

D. Diversion or piping of any natural or man-made stream channel.

E. Installation, replacement or substantial repair of stormwater management facilities or appurtenances thereto.

F. Construction of new buildings or additions to existing buildings.

G. All activities related to proper operation and maintenance of stormwater management facilities and BMPs.

H. All activities that may contribute non-stormwater discharges to the municipality's regulated small MS4.

I. All discharges to the municipality's regulated MS4, including discharges from Regulated Earth Disturbance activities.

Section 104. Repealer.

This Ordinance shall repeal all other ordinances, and regulations that are inconsistent with the current MS4 regulations, or parts thereof, which are contrary to or in conflict with the provisions of this Ordinance to the extent necessary to give this Ordinance full force and effect.

Section 105. Severability.

Should any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of this Ordinance as a whole or any other part hereof, the parts or sections remaining shall remain in effect as if the part of the section declared unconstitutional had never been a part of this Ordinance.

Section 106. Liability Disclaimer.

A. Neither the granting nor the denial of any approval nor the compliance with the provisions of this Ordinance or with any condition imposed by the Township, its officials, employees, or designated representatives thereunder, shall relieve any person from any responsibility for damage to persons or property resulting therefrom, or as otherwise imposed by law, nor impose any liability upon the Township officials, employees or its designated representatives to the maximum extent permitted by law.

B. Neither the granting nor the denial of any permit which includes any stormwater management requirements shall not constitute a representation, guarantee or warranty of any kind by the Township, the Township officials, employees, or designated representatives thereof of the practicability or safety of any stormwater structure or facility, use or other plan proposed, and shall create no liability or cause of action upon any municipal official, employee, or designated representative thereof for any damage that may result pursuant thereto to the maximum extent permitted by law.

Section 107. Compatibility with Other Ordinance Requirements.

Approvals issued pursuant to this Ordinance do not relieve the Applicant of the responsibility to comply with or to secure required permits or approvals for activities regulated by any other applicable codes, rules, statutes or ordinances.

Section 108. References.

Specific methods and publications indicated in this Ordinance shall, in all cases, refer to the latest available edition and include revisions and amendments thereto.

Section 109. Findings.

Federal and Commonwealth regulations require this municipality to obtain a permit for discharges from its MS4 and to implement a program for stormwater controls.

Inadequate maintenance of stormwater BMPs cause degradation of water quality, can amplify localized flooding, and other problems.

A program of reasonable regulation of connections and discharges to municipal stormwater management facilities will be beneficial.

Stormwater is an important resource.

Section 110. Authority.

The Municipality has the authority to enact the Frankstown Township Stormwater Management Ordinance pursuant to The Second Class Township Code, Act of May 1, 1933, P.L. 103, *as amended,* 53 P.S. §§ 65101–68701; the "Storm Water Management Act", Act of October 4, 1978, P.L. 864, *as amended,* 32 P.S. §§ 680.1-680.17; and The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L 805, *as amended,* 53 P.S. §§ 10101–11202.

Section 111. Erroneous Permit.

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an Applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the Municipality purporting to validate such a violation.

ARTICLE 2

DEFINITIONS

ACT - The Storm Water Management Act (Act of October 4, 1978, P.L. 864 No. 167; 32 P. S. Sections 680.1-680.17, as amended by Act of May 24, 1984, No. 63).

AGRICULTURAL ACTIVITIES - Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

ALTERNATION - As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another; also the changing of surface conditions by causing the surface to be more or less impervious; land disturbance.

APPLICANT - A landowner or developer who has filed an application for approval to engage in any activity as defined in Section 103 of this Ordinance, including his/her heirs, successors and assigns.

BMP (Best Management Practice) - Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from regulated activities. To meet Commonwealth water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: "structural" or "nonstructural." In this Ordinance, nonstructural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

BMP MANUAL – The publication issued by the Pennsylvania Department of Environmental Protection entitled "Pennsylvania Stormwater Best Management Practices Manual" dated December 2006 as amended.

BUFFER AREA - Area that is protected from development in order to prevent degradation of the waterbody or water quality.

CHANNEL - A perceptible natural or artificial waterway which periodically or continuously contains moving water or which forms a connecting link between two bodies of water. It has a definite bed and banks, which confine the water.

CONSERVATION DISTRICT - The Blair County Conservation District.

COUNTY - Blair County, Pennsylvania.

CULVERT - A closed conduit for the free passage of surface drainage under a highway, railroad, canal or other embankment.

DAM - An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semi fluid, or a refuse bank, fill or structure for highway, railroad or other purposes which does or may impound water or another fluid or semi fluid.

DEP - The Pennsylvania Department of Environmental Protection.

DESIGN CRITERIA - (1) Engineering guidelines specifying construction details and materials. (2) Objectives, results, or limits which must be met by a facility, structure, or process in performance of its intended functions.

DESIGN STORM - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24-hours), used in the design and evaluation of stormwater management systems.

DETENTION - The slowing, dampening or attenuating of runoff flows entering the natural drainage pattern or storm drainage system by temporarily holding water on a surface area in a detention basin or within the drainage system.

DETENTION POND OR BASIN - An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Stored water may be released from the basin during the storm.

DEVELOPER - The person, persons, or any corporation, partnership, association, or other entity or any responsible person therein or agent therefor that undertakes the activities associated with changes in land use. The term "developer" is intended to include but not necessarily be limited to the term "subdivider", "owner", and "builder" even though the individuals involved in successive stages of a project may vary.

DEVELOPMENT - Any activity, construction, alteration, change in land use or practice that affects stormwater runoff characteristics.

DEVELOPMENT SITE - The specific tract of land for which a regulated activity is proposed.

DISCHARGE - The flow or rate of flow from a canal, conduit, channel or other hydraulic structure.

DOWNSLOPE PROPERTY LINE - That portion of the property line of the lot, tract or parcels of land being developed located such that all overland or pipe flow from the site would be directed towards it.

DRAINAGE CONVEYANCE FACILITY - A Stormwater Management Facility designed to transmit stormwater runoff and shall include streams, channels, swales, pipes, conduits, culverts storm sewers, etc.

DRAINAGE - In general, the removal of surface water from a given area. Commonly applied to surface water and ground water.

DRAINAGE AREA - (1) The area of a drainage basin or watershed, expressed in acres, square miles, or other unit of area. Also called catchment area, watershed, river basin. (2) The area served by a sewer system receiving storm and surface water, or by a watercourse.

DRAINAGE PLAN - The documentation of the stormwater management system, if any, to be used for a given development site, the contents of which are established in Article 8 of this Ordinance.

DRAINAGE WAY - The natural or man-made path of surface water from a given area.

EARTH DISTURBANCE ACTIVITY - A construction or other human activity which disturbs the surface of the land, including, but not limited to: clearing and grubbing; grading; excavations; embankments; road maintenance, building construction; and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

ENCROACHMENT - Any structure or activity which in any manner changes, expands or diminishes, the course, current or cross section of any watercourse, floodway or body of water.

EROSION - The movement of soil particles by the action of water, wind, ice or other natural forces.

EROSION CONTROL - The application of measures to reduce erosion of land surfaces.

EROSION AND SEDIMENT POLLUTION CONTROL PLAN - A plan that is designed to minimize accelerated erosion and sedimentation.

FLOOD - A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers and other waters of the Commonwealth.

FLOODPLAIN - Any land area susceptible to inundation by water from any natural source of delineated by the Federal Emergency Management Agency, Federal Insurance Administration, Flood Hazard Boundary Maps.

FLOODWAY - The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the one hundred (100) year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by the Federal Emergency Management Agency (FEMA). In any area where no FEMA maps or studies have defined the boundary of the one hundred (100) year frequency floodway, it is assumed, absent of any evidence to the contrary, that the floodway extends from the stream to fifty (50) feet from the top of the bank of the stream. Where detailed studies have been conducted, the water surface elevation shall be shown on plans in addition to the line delineated from the FEMA maps. In areas where they differ, the water surface elevation shall take precedence.

FOREST MANAGEMENT/TIMBER OPERATIONS - Planning and activities necessary for the management of forestland. These include timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

FREEBOARD - A vertical distance between the elevation of the design high water and the top of dam, levee, tank, basin, channel or ditch. This space is required as a safety margin.

GRASSED WATERWAY - A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water.

GROUND COVER - Materials covering the ground surface.

GROUNDWATER - Subsurface water occupying the saturation zone, from which wells and springs are fed.

GROUNDWATER RECHARGE - Replenishment of groundwater naturally by precipitation or runoff or artificially by spreading or injection.

HYDROLOGIC SOIL GROUP (hereinafter "HSG") - Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The Natural Resource Conservation Service (hereinafter "NRCS") defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NCRS).

IMPERVIOUS - Not allowing or allowing only with great difficulty the movement of water; impermeable.

IMPERVIOUS SURFACE - A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to: roofs; additional indoor living spaces, patios, garages, storage sheds and similar structures; and any new streets or sidewalks. Decks, parking areas, and driveway areas are not counted as impervious areas if they do not prevent infiltration.

IMPOUNDMENT - A detention basin designed to retain stormwater runoff and release it at a controlled rate.

INFILTRATION - (1) The flow or movement of water through the interstices or pores of a soil or other porous medium. (2) The absorption of liquid by the soil.

INLET - A surface connection to a closed drain. A structure at the diversion end of a conduit. The upstream end of any structure through which water may flow.

INTERCEPTOR - A channel, berm or dike constructed across a slope for the purpose of intercepting stormwater, reducing the velocity of flow and diverting it to outlets where it may be disposed.

KARST - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage, and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

LAND DEVELOPMENT - Inclusive of any or all of the following meanings: (i) the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose inolving (a) a group of two or more buildings or (b) the division or allocation of land or space beween or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features; (ii) any

subdivision of land; (iii) development in accordance with Section 503(1.1) of the Pennsylvania Municipalities Planning Code.

LAND/EARTH DISTURBANCE - Any activity involving the changing, grading, tilling, transportation or filling of ground or stripping of vegetation or ~~and~~ any other activity which causes an alteration to the natural condition of the land.

LAND USE - The primary application employed in an area.

LINEAMENTS - Straight or gently curved, lengthy features frequently expressed topographically as depressions or lines on the earth's surface. They can be more easily observed at a height of one hundred (100) meters or more and are usually found by researching aerial photographs or satellite photography. They are usually located in areas of faulting or in dense jointing along some rock stratigraphy.

MAINTENANCE - The upkeep necessary for efficient operation of physical properties.

MUNICIPAL ENGINEER/TOWNSHIP ENGINEER - A professional engineer licensed in the Commonwealth of Pennsylvania, duly appointed by the Township of Frankstown.

NATURAL STORMWATER RUNOFF REGIME - A watershed where natural surface configurations, runoff characteristics and defined drainage conveyances have attained the conditions of equilibrium.

NRCS - Natural Resource Conservation Service (previously SCS).

OUTFALL - (1) The point, location or structure where drainage discharges from a sewer, drain or other conduit. (2) The conduit leading to the ultimate discharge point.

OUTLET - Points of water disposal from a stream, river, lake, tidewater or artificial drain.

OUTLET CONTROL STRUCTURE - The means of controlling the relationship between the headwater elevation and the discharge, placed at the outlet or downstream end of any structure through which water may flow.

PERFORMANCE STANDARD - A standard which establishes an end result or outcome which is to be achieved but does not prescribe specific means for achieving it.

PEAK DISCHARGE - The maximum rate of stormwater runoff from a specific storm event.

PENNSYLVANIA DOT - Pennsylvania Department of Transportation.

PIPE - A culvert, closed conduit or similar structure (including appurtenances) that conveys stormwater.

POINT DISCHARGE - The discharge from a pipe or channel that concentrates runoff at a single area.

PROJECT SITE - The specific area of land where any regulated activities in the municipality are planned, conducted, or maintained.

QUALIFIED PERSON OR QUALIFIED PROFESSIONAL - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Ordinance.

RECHARGED VOLUME - The volume of water that is required to be recharged from developed sites.

REGULATED ACTIVITY - Any activity that may affect stormwater runoff and any activities that may contribute non-stormwater discharges to a regulated small MS4.

REGULATED EARTH DISTURBANCE ACTIVITY - Activity involving earth disturbance subject to regulation under 25 Pa. Code 92a, 25 Pa. Code 102, or the Clean Streams Law.

RELEASE RATE PERCENTAGE - The watershed factor determined by comparing the maximum rate of runoff from a subbasin to the contributing rate of runoff to the watershed peak rate at specific points of interest.

RETURN PERIOD - The average interval in years within which a storm event of a given magnitude can be expected to recur. For example, the 25-year return period rainfall has a four (4) percent probability of occurring in any given year.

RUNOFF - That part of precipitation that flows over the land.

RUNOFF CHARACTERISTICS - The surface components of any watershed, which affect the rate, amount, and direction of stormwater runoff. These may include but are not limited to: vegetation, soils, slopes and man-made landscape alterations.

SAFE PASSAGE - The routing of peak runoff events, usually the one hundred (100) year design event, safely through a structure without failure of that structure.

SCOUR - Generally refers to the change in the channel configuration provoked by sediment imbalance, due to natural or man-made causes, between the supply and transport capacity of the channel.

SEDIMENT - Mineral or organic solid material that is being transported or has been moved from its site of origin by air, water or ice and has come to rest.

SEDIMENTATION - The process by which mineral or organic matter is accumulated or deposited by moving water, wind or gravity.

SEDIMENT BASIN - A barrier, dam, or detention basin located and designed to retain rock, sand, gravel, silt or other material transported by water.

SHEET FLOW - Runoff that flows over the ground surface as a thin, even layer, not concentrated in a channel.

SPILLWAY - A depression in the embankment of a pond or basin, which is used to pass peak discharge greater than the maximum design storm controlled by the pond or basin.

STABILIZATION - The proper placing, grading and/or covering of soil, rock or earth to ensure their resistance to erosion, sliding or other movement.

STATE WATER QUALITY REQUIREMENTS - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

STORM FREQUENCY - The average interval in years over which a storm event of a given precipitation volume can be expected to occur.

STORM SEWER - A system of pipes and/or open channels that convey intercepted runoff and stormwater from other sources, but excludes domestic sewage and industrial waste.

STORMWATER - Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

STORMWATER COLLECTION SYSTEM - Natural or man-made structures that collect and transport stormwater through or from a drainage area to the point of final outlet including, but not limited to, any of the following: conduits and appurtenant features, canals, channels, ditches, streams, culverts, streets, and pumping stations.

STORMWATER MANAGEMENT FACILITY - Any structure, natural or man-made, that, due to its condition, design or construction, conveys, stores or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention basins, open channels, storm sewers, pipes and infiltration structures.

STORMWATER MANAGEMENT SITE PLAN - The plan prepared by the Applicant and or Developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance. Stormwater Management Site Plan will be designated as “SWM Site Plan” throughout this Ordinance.

STRATA - Tabular or sheet-like mass, distinct layers of homogenous or gradational sedimentary material (consolidated rock or unconsolidated earth) of any thickness, visually separable from other layers above and below by a discrete change in the character of the material deposited or by a sharp physical break deposition or both.

STRATIGRAPHIC UNIT - A stratum or body of strata recognized as a unit in the classification of the rocks of the earth's crust with respect to any specific rock character, property, attribute or for any purpose such a description, mapping and correlation.

SUBAREA - The smallest drainage unit of a watershed for which stormwater management criteria have been established in the Stormwater Management Plan.

SUBDIVISION - The division or redivision of a lot, tract or parcel of land by any means into two or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development, provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than ten (10) acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.

SWALE - A natural low-lying stretch of land or minor man-made conveyance channel, which gathers or carries surface water runoff.

SWM - Stormwater management.

TOWNSHIP/MUNICIPALITY - The Township of Frankstown, Blair County, Pennsylvania

TOPOGRAPHY - The general configuration of a land surface or any part of the earth's surface, including its relief and position of its natural and man-made features. The natural or physical surface features or a region, considered collectively as to its form.

UNDETAINED AREA - An area of a site that cannot be routed to a stormwater management facility because of its location. Generally, small areas around access drives or below stormwater management facilities.

UTILITY AND DRAINAGE EASEMENT - A right granted by a landowner to a grantee allowing the use of private land for utility installation and stormwater management purposes.

WATERCOURSE - Any channel for conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

WATER QUALITY VOLUME - The volume of runoff required to be controlled from a site in a water quality BMP.

WATERSHED - The entire region or area drained by a river or other body of water whether natural or artificial, a drainage basin or sub-basin. A "designated watershed" is an area delineated by the Pennsylvania DEP and approved by the Environmental Quality Board for which counties are required to develop watershed stormwater management plans.

WATERSHED STORMWATER MANAGEMENT PLAN - The plan for runoff throughout a designed watershed adopted by Blair County as required by the Pennsylvania Storm Water Management Act.

WATERS OF THE COMMONWEALTH - Any and all rivers, streams, creeks, rivulets, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

WATER TABLE - The upper surface of a layer of saturated material in the soil.

WETLAND - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, ferns and similar areas.

ARTICLE 3

STORMWATER MANAGEMENT REQUIREMENTS

Section 301. General Standards.

A. No discharge of toxic material shall be permitted into any stormwater management system. Where required by Federal and Commonwealth regulation, the Developer shall be responsible for obtaining a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges.

B. Erosion and Sedimentation: All land disturbance activities shall be conducted in such a way as to minimize accelerated erosion and sedimentation. Measures to control erosion and sedimentation shall at a minimum meet the standards of Part 5, "General Design Principles", Section 507, "Erosion and Sediment Control", of Township Ordinance No. 8-15-91, "Frankstown Township Subdivision and Land Development Ordinance", and of the Conservation District and the Rules and Regulations of the Pennsylvania DEP.

C. Grading and Drainage Plan: All blocks and lots shall be laid out and graded to provide positive drainage away from and around structures and to prevent the collection of stormwater in pools. Minimum two percent (2%) slopes away from structures shall be provided. A "Grading and Drainage Plan" for individual lots indicating the buildable area within each lot, complying with the setback requirements, for which positive drainage is assured shall be provided and approved by the Township prior to the issuance of a building permit for such lot. The "Grading and Drainage Plan" must document that stormwater drainage from the lot will not adversely impact adjoining properties and will not create any hazards to persons or cause any damage to other lots, properties or infrastructure.

D. All regulated activities in the Township, which do not fall under the exemption criteria shown in Section 802 of this Ordinance, shall submit a Stormwater Management Plan to the Township for review and approval. These criteria shall apply to the total proposed development even if development is to take place in phases. Impervious cover shall include, but not be limited to, any roof, parking or driveway areas, and any new streets and sidewalks. Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious for the purposes of comparison to the exemption criteria.

E. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities or open channels consistent with this Ordinance.

F. Stormwater management facilities and related installations also shall be provided:

1. To ensure adequate drainage of all low points along the curb line of streets.

2. To intercept stormwater runoff along streets of intervals reasonably related to the extent and grade of the area drained, and to prevent substantial flow or water across intersections or flooded intersections during storms, in accordance with the procedures contained in Design Manual 2 (DM-2), Chapter 10, of the Pennsylvania DOT.

3. To ensure adequate and unimpeded flow of stormwater under driveways in, near or across natural watercourses or drainage swales. Suitable pipes or other waterways shall be provided as necessary.

4. To properly drain stormwater runoff from all land development projects, except as required by recharge criteria. All lot and open areas shall be designed to drain to the nearest practical street or drainage system, existing or proposed, as defined by the Township Engineer, with no impact on adjoining properties, unless an area specifically designed for stormwater detention is provided.

G. There shall be no increase in the peak rate of stormwater runoff discharge from any regulated activity covered by this Ordinance following the completion of the activity (post-development conditions) to existing points of concentrated drainage that discharge onto adjacent property. These existing points of concentrated drainage shall not be altered.

H. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of the existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Ordinance. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Developer must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge or otherwise prove that no erosion, sedimentation, flooding, or other harm will result from the concentrated discharge.

I. Where a watercourse, drainage way, channel, stream or spring seep traverse a development site, such watercourse, drainage way, channel, stream or spring seep shall not be moved or diverted. A utility and drainage easement shall be provided paralleling the line of such watercourse, drainage way, channel, stream or spring seep. The width of the utility and drainage easement shall be adequate to preserve the unimpeded flow of the natural discharge in the one hundred (100) year floodplain, in accordance with the computed width of the floodplain. The terms of the easements shall stipulate that no trees, shrubs, excavation, or fill be placed and no regrading be performed within the area of the easement without written approval of the Township. The terms of the easements shall provide for maintenance of the easement, including mowing of vegetation within the easement, by the Township. All easement agreements shall be recorded with a reference to the easement indicated on the site plan. The format and content of the easement agreement shall be reviewed by the Township Supervisors, Township Engineer and Township Solicitor and approved by the Township Supervisors.

J. When it can be shown that, due to topographic conditions, natural drainage ways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainage ways. Work within natural drainage ways shall be subject to approval by Pennsylvania DEP through the Joint Permit Application process, or, where appropriate by Pennsylvania DEP, through the General Permit process.

K. Any stormwater management facilities regulated by this Ordinance that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by Pennsylvania DEP through the Joint Permit Application process, or, where deemed appropriate by Pennsylvania DEP, the General Permit process. When there is a question whether wetlands may be involved, it is the responsibility of the Developer or his/her agent to show that the land in question cannot be classified as wetlands; otherwise approval to work in the area must be obtained from Pennsylvania DEP.

L. Any stormwater management facilities regulated by this Ordinance that would be located on Federal, Commonwealth or County highway rights-of-way shall be subject to approval by the appropriate governmental agency having jurisdiction.

M. Minimization of impervious surfaces and infiltration of runoff through seepage beds, recharge trenches, etc. are encouraged, where soil conditions permit (not including soils with fragipans), to reduce the size of eliminate the need for detention facilities.

N. To promote overland flow and infiltration/percolation of stormwater, except in areas where soils with fragipans exist, roof drains and driveway drainage shall not be connected to streets, storm sewers, or roadside ditches unless approved to do so by the Township on a case-by-case basis. Roof drain and driveway drainage shall be connected to a stormwater infiltration system or systems designed in conformance with Article 5, Section 502 of this Ordinance.

O. Where deemed necessary by the Township Supervisors and Township Engineer, the Applicant shall submit an analysis of the impacts of detained stormwater flows on downstream areas within the watershed. These impacts shall be identified with concurrence from the Township Engineer. The analysis shall include hydrologic and hydraulic calculations necessary to determine the impact peak discharge modifications from the proposed development have on critical locations such as dams, tributaries, existing developments, undersized culverts, flood prone areas, floodplains, etc.

P. Springs, surface water/groundwater sump pump discharges and french drains shall extend to a stormwater collection/conveyance/control system or natural watercourse in accordance with the approved stormwater management plan for the development site. The outlets for these facilities shall be equipped with energy dissipation devices approved by the Township Engineer to prevent erosion.

Q. When stormwater conveyance pipes, channels and swales are located in undedicated land, they shall be placed within utility and drainage easements specifying rights of entry, not less than twenty (20) feet wide as approved by the Township Supervisors, who may require additional width of easement as circumstances warrant. Where practicable, easements shall be parallel with and conjunctive to property lines. All easement agreements shall be recorded with a reference to the easement indicated on the site plan. The format and content of the easement agreement shall be reviewed by the Township Supervisors, Township Solicitor and Township Engineer and approved by the Township Supervisors.

R. All of the proposed Earth Disturbance Activity must meet all requirements of 25 Pa. Code § 102.

S. Provide for proper long-term operation and maintenance of stormwater management BMPs.

T. The Municipality may grant relief from or a modification of the requirements of one or more provisions of this Ordinance when the modification will remove or reduce an unreasonable standard or undue hardship pertaining to the land in question, which is grossly disproportionate to any benefit derived from the standard, or when the alternative standard provides equal or better results; provided that such modification will not be contrary to the public interest; and, that the purpose and intent of this Ordinance is observed. All requests for modifications shall be in writing and shall accompany and be part of the Stormwater Management Site Plan. The request for modification shall fully state and explain the requested modification. It shall be the burden of the Applicant to demonstrate compliance with the above conditions to the satisfaction of the Board of Supervisors of the Municipality. The request for modification shall be presented and discussed at a public meeting of the Municipality. The Municipality's decision shall be given to the Applicant in writing and shall be made part of the minutes of the meeting at which the Municipality's decision was made. If the requested modification is granted, the reason for the relief or modification and any restriction placed upon the land as a condition for such relief shall be set forth on the approved final plan.

U. Municipality shall obtain DEP's assistance to evaluate and approve alternative control measures.

V. Stormwater Management Site Plan shall be available on-site during construction.

W. Impervious areas shall be measure horizontally.

X. Design requirements and specific considerations shall be provided for karst areas.

Y. Infiltration BMPs spread out and shallow as much as practicable.

Z. Requirement that normally dry, open-top, storage BMPs should drain in 24 to 72 hours from end of storm.

AA. Precipitation values shall be taken from, or consistent with, NOAA Atlas 14 Point Percipitation Frequency (PF) Estimates http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=pa.

BB. Low Impact Development (hereinafter "LID") should be used to maximum extent practicable.

CC. Reference to DEP Stormwater BMP Manual, as amended and updated.

Section 302. <u>Stormwater Runoff Quantity Control Standards.</u>

A. Runoff Rates: There shall be no increase in the peak rate of stormwater runoff discharge from any regulated activity covered by this Ordinance following the completion of the activity (post-development conditions) over the rate that would have occurred from the land prior to the regulated activity (pre-development conditions). This criterion shall apply to the total regulated activity even if the regulated activity is to take place in stages.

1. Off-site areas, which drain through a proposed development site, are not subject to the control standard when determining allowable peak runoff. However, on-site drainage facilities shall be designed to safely convey off-site flows associated with the one hundred (100) year return period event through the development site without creating any hazard to persons or causing any damage to property or other infrastructure.

2. Where the site area to be impacted through a proposed development activity differs significantly from the total site area, only the proposed impact area shall be subject to the runoff criteria.

B. Downstream Hydraulic Capacity Analysis: Any downstream or off-site hydraulic capacity analysis conducted in accordance with these standards shall use the following criteria for determining adequacy for accepting increased peak flow rates:

1. Natural or man-made channels or swales must be able to convey the post-development runoff from the Development associated with a one-hundred (100) year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the Pennsylvania DEP Erosion and Sediment Pollution Control Program Manual, latest edition.

2. Man-made channels or swales required to convey flows to a stormwater management detention basin must be designed to convey the post-development runoff from the Development associated with a one hundred (100) year return period event with a freeboard of at least six (6) inches.

3. Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area must be designed in accordance with Pennsylvania DEP, Chapter 105 rules and regulations, if applicable, and, at a minimum, pass the post-development runoff from the Development associated with a one hundred (100) year return period event. Culverts, bridges, storm sewers or any other facilities required to convey flows to a stormwater management detention basin must be designed to convey the post-development runoff from the Development associated with a one hundred (100) year return period event.

4. It must be demonstrated that the downstream conveyance channels or swales, other stormwater facilities, roadways or overland areas must be capable of safely conveying the post-development runoff associated with the one hundred (100) year return period event without creating any hazard to persons or causing damage to buildings or other infrastructure.

5. Where the downstream conveyance channel or other facility is located within a floodplain, as documented on the Township FEMA Flood Insurance Rate Maps, it must be demonstrated that the limits of the said floodplain are not increased by the proposed activity. A zero increase in water surface elevation is permitted and supercedes the FEMA criteria.

6. Stormwater management basins that fall under the Pennsylvania DEP, Chapter 105 criteria of a "Dam" must meet the criteria within said Chapter 105, as amended or supplemented to date. Based upon the criteria within said Chapter 105 as of the date of enactment of this Ordinance, impounding structures are considered to be dams if:

    a. The impoundment's contributory drainage area exceeds one hundred (100) acres, or

    b. The greatest depth of water, in the impoundment, measured from the upstream toe of the dam to the top of the dam, at maximum storage elevation, exceed fifteen (15) feet, or

c. The impounding capacity (storage volume) at the maximum storage elevation exceeds fifty (50) acre-feet (2,178,000 cubic feet or 16,292,550 gallons).

Section 303. <u>Stormwater Calculation Methodologies.</u>

A. Design criteria and calculation methodologies have been classified by functional group for presentation as follows:

1. Peak runoff rate discharge requirements.

2. Runoff volume controls.

3. Storm drain design including conveyance, channel protection and stability.

B. The design criteria and calculation methodologies have been developed to simplify stormwater management designs, unify methods, remove model parameters subjectivity, remove improperly used methods and to ensure stormwater management decisions are based more realistically upon hydrologic processes. In addition, common sense should always be used as a controlling criterion. The design criteria and calculation methodologies provide consistent and process oriented design procedures for application by land development professionals. It is recognized that in an attempt to generalize the computational procedures, assumptions have been made which on some occasions, may be violated. If such a violation is identified, alternate standards and procedures may be applied. The Township Supervisors and Township Engineer must agree to any request for use of alternate standards or procedures under this provision prior to formal submission of plans for consideration by the Township.

C. Performance Standard

1. Stormwater controls for new impervious cover must produce 0.1" or less of runoff from 1-year, 24-hour storm to a municipal regulated MS4.

2. No increase in peaks for the 1-year through the 100-year event.

D. Peak Runoff Rate Control

1. Any site where the increase in post-development peak runoff rates is determined to be negligible by the Township Supervisors and Township Engineer is exempt from the requirement to provide stormwater detention. In support of this exemption, the Applicant must document that the downstream conveyance systems have adequate capacity to convey the additional discharge without adversely affecting downstream properties.

2. Small sites located directly adjacent to the main stem of watercourses may not be required to provide stormwater detention if approved by the Township

Supervisors and the Township Engineer. The Township has the right to reject any plan that uses this exemption without prior approval of the Township.

3. Stormwater management analyses must be performed using the following models. The size criteria shall be based upon the drainage area size including site area and all off-site area draining across the Development. More intensive physically based models may be used at the discretion of the Township Engineer and the Township Supervisors, but only for sites greater than ten (10) acres in size.

   a. NRCS's TR-55 or TR-20
   b. Modified Rational Method

4. Major natural drainage divides shall not be altered without the prior consent of the Township Engineer and the Township Supervisors.

5. Pre- and post-development stormwater management analyses shall be conducted using the following design storm events. In addition, the designer must demonstrate that safe conveyance of the one hundred (100) year event can be done without harm to downstream properties or other infrastructure. However, if warranted by historic flooding in the tributary stormwater conveyance system, the Township may require more stringent criteria for peak runoff control including requiring the one hundred (100) year discharge to be less than the downstream conveyance system capacity.

   a. One (1) year
   b. Two (2) year
   c. Ten (10) year
   d. Twenty-five (25) year
   e. One Hundred (100) year

6. The following 24-hour precipitation depths shall be used for stormwater management analyses. Precipitation values shall be taken from, or consistent with, NOAA Atlas 14 Point Precipitation Frequency (PF) Estimates http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=pa.

Return Period	Precipitation Depth
1-year	2.22 inches
2-year	2.67 inches
10-year	3.85 inches
25-year	4.62 inches
100-year	5.94 inches

7. The NRCS's Type II precipitation distribution is required for all stormwater management analyses unless the modified rational method is used.

8. The NRCS's dimensionless unit hydrograph "k" factor shall be 484 for both pre- and post-development stormwater analyses.

9. All undeveloped area shall be modeled as meadow or woods in good hydrologic condition. Existing impervious area may be modeled as being impervious for pre-development conditions. Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious for the purposes of these criteria.

10. The NRCS's curve number (CN) shall be used as the rainfall to runoff transformation parameter for all stormwater analyses.

11. Curve numbers must be rounded to the next highest whole numbers for use in pre-packaged hydrologic models.

12. The NRCS's method to determine unconnected impervious area adjustments for CN can be used for distinctly defined impervious land areas that flow onto pervious areas in a dispersed manner. This method may only be used to calculate runoff from site impervious areas that actually flow across pervious areas. This method cannot be applied to the entire site using average weighted CN values.

13. The NRCS antecedent runoff condition II (ARC II, previously AMC II) must be used for all simulations. The use of continuous simulation models that vary the ARC are not permitted for stormwater management purposes.

14. The following Time of Concentration (Tc) computational methodologies shall be used unless another method is pre-approved by the Township Engineer. The time of concentration is to represent the average condition that best reflects the hydrologic response to the area. For example, large impervious areas bordered by small pervious areas may not consider the effect of the previous areas in the Tc computation. If the designer wants to consider the affect of the pervious area, runoff from the pervious and impervious areas must be computed separately with the hydrographs being combined to determine the total runoff from the area. Under no circumstances shall the post-development Tc be greater that the pre-development Tc for any watershed or sub-watershed modeling purposes. This includes when the designer has specifically used swales to reduce flow velocities. In the event that the design post-development Tc is greater, it shall be set by default equal to the pre-development Tc for modeling purposes.

    a. Pre-development - NRCS's Lag Equation
    b. Post-development - Commercial, industrial, or other areas with large impervious area - NRCS's Segmental Method

15. Stormwater management basins must provide safe passage of the one hundred (100) year return period peak runoff rate assuming that all of the principal spillway orifices are fully clogged, and the principal spillway overflow is 50% clogged. A minimum of a one (1) foot freeboard must also be maintained above

the resulting "maximum" water surface elevation (W.S.E.). Any embankment emergency spillway shall be assumed to be clogged. Stormwater management basins with embankments completely made up of natural undisturbed soil (fully in "cut"), or where roadways act as the emergency spillway, are permitted. However, the design engineer must verify downstream stability and control.

16. The full Modified Puls routing method must be used for stormwater management basin analyses. Simplified methods of determining basin size requirements such as those in TR-55 (1986) can only be used for preliminary estimates.

17. Pre-packaged hydraulic programs are not approved for the analysis of underground stormwater management facilities unless it can be verified that the program rounding subroutines used for the stage/storage data do not affect the results. This is because, for very small storage volumes, the program may round off the volume to a significant percentage.

18. Full supporting documentation must be provided for all stormwater management designs.

E. Volume Control

The volume control practices as defined in the BMP Manual shall be utilized for all Regulated Activities to the maximum extent practicable. Water volume controls shall be implemented using the Design Storm Method in Subsection 1 or the Simplified Method in Subsection 2 herein.

For Regulated Activities that create 10,000 square feet or less of impervious cover that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; therefore, the Applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

1. The Design Storm Method (CG-1 in the SWM Manual) is applicable to any size of Regulated Activity. This method requires detailed modeling based on site conditions.

    a. Do not increase the post-development total runoff volume for all storms equal to or less than the 2-year, 24-hour duration precipitation.

    b. For modeling purposes:

        i. Existing (pre-development) non-forested pervious areas must be considered meadow or its equivalent.

        ii. Twenty (20) percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

2. The Simplified Method (CG-2 in the SWM Manual) provided below is independent of site conditions and should be used if the Design Storm Method is not followed. This method is not applicable to Regulated Activities greater than 10,000 square feet or for projects that require design of stormwater storage facilities. For new impervious surfaces:

   a. Stormwater facilities shall capture at least the first two inches (2") of runoff from all new impervious surfaces.

   b. At least the first one inch (1.0") of runoff from new impervious surfaces shall be permanently removed from the runoff flow (i.e., it shall not be released into the surface waters of this Commonwealth). Removal options include reuse, evaporation, transpiration, and infiltration.

   c. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first one-half inch (0.5") of the permanently removed runoff should be infiltrated.

   d. This method is exempt from the requirements of Section 303.D -Peak Runoff Rate Control.

Section 304. Exemptions.

A. Specific small activities are exempt from requirements to prepare, submit, and obtain approvals for stormwater management site plans are:

   1. Regulated activities (projects) that result in cumulative earth disturbances less than 1,000 square feet

   2. Permitting requirements agriculture and silviculture activities that are conducted according to the requirements of 25 Pa. Code 102.

ARTICLE 4

STORMWATER MANAGEMENT SITE PLAN REQUIREMENTS

Section 401. Applicability.

In addition to the performance standards and design criteria requirements of Article 3 of this Ordinance, the Developer shall implement the following water quality requirements of this Article unless otherwise exempted by the provisions of this Ordinance.

Section 402. Water Quality Requirements.

A. No discharge materials, toxic or otherwise, shall be permitted into any stormwater management system. Where required by federal and state regulation, the landowner or developer shall be responsible for obtaining any required permit(s) (such as an NPDES permit) for stormwater discharges.

B. In addition to the quantity requirements of this Ordinance, the Developer shall:

1. Design stormwater detention basins so that the outlet of the basin shall, in addition to any other stormwater requirements imposed by the Township stormwater regulations, discharge the 1-year, 24-hour storm over a 24-hour period.

2. As an alternative to Subsection 402.B.1 above, the water quality objectives may be achieved through a combination of best management practices (BMPs) including, but not limited to: infiltration structures, detention basins, vegetation filter strips and buffers. The combination of BMPs shall be designed according to the requirements listed under Section 403 and in consultation with the Township Engineer.

3. In lieu of meeting the requirements of Subsection 402.B.1 or Subsection 402.B.2 above, the Developer may submit original and innovative designs to the Township Engineer for review and approval.

Section 403. BMP Selection Criteria.

A. In selecting the appropriate BMPs or combinations thereof, the Developer shall consider the following:

1. Total contributing area.
2. Location of fragipans.
3. Permeability and infiltration rate of the site soils.
4. Slope and depth to bedrock.
5. Seasonal high water table.
6. Proximity to building foundations and well heads.
7. Erodibility of soils.
8. Land availability and configuration of the topography.

B. The following additional factors should be considered when evaluating the suitability of the BMPs used to control water quality at a given development site.

1. Peak discharge and required volume control.
2. Stream bank erosion.
3. Efficiency of the BMPs to mitigate potential water quality problems.
4. The volume of runoff that will be effectively treated.

5. The nature of the pollutant(s) being removed.
6. Maintenance requirements.
7. Recreation value.
8. Enhancement of aesthetics and property values.

Section 404. Deed Covenants.

A. Stormwater management BMPs shall be recorded as deed covenants.

B. Stormwater management operation and maintenance (hereinafter "O&M") plans and agreements for O&M shall be recorded as deed covenants.

C. Enforcement Pursuant to Article 8 if provisions of this Ordinance, including the requirements of O&M plans are not satisfied.

D. Authorize the municipality to perform O&M when the Applicant does not.

E. If the Applicant fails to adhere to the O&M agreement, the Municipality may perform O&M and charge the Applicant appropriate fees and costs incurred for the Municipality's performance. The Applicant shall pay the Municipality's fees and costs incurred within 30 days of the Municipality's written demand for payment thereof. If the Applicant does not pay said fees and costs to the Municipality, in full, within said 30-day period, the Municipality shall be authorized to place and enter a lien against the subject property for the amount of unpaid fees.

Section 405. Easements.

A. Easement and rights-of-way shall be provided for access to the BMP's for operation and maintenance by the municipality or its duly authorized representative.

B. Provisions shall be required for conservation easements when applicable.

Section 406. Criteria for Infiltration Systems.

A. Infiltration systems shall be sized and designed based upon local soil and ground water conditions. Infiltration systems shall not be used where soils with fragipans exist. Percolation tests for each site shall be completed and certified by the Township Sewage Enforcement Officer. The design percolation rate shall be one-third of the tested percolation rate.

B. Infiltration systems shall be located at least ten (10) feet from basement walls.

C. Infiltration systems shall not be used to handle runoff from commercial or industrial workings, or commercial or industrial parking areas. This prohibition does not extend to roof areas that are demonstrated to be suitably protected from the effects of the commercial/industrial activities.

D. Infiltration systems shall not receive runoff until the entire drainage area to the system has received final stabilization.

E. The stormwater infiltration facility design shall provide an overflow system with measures to provide a non-erosive velocity of flow along its length and at the outfall.

F. Roof drain and driveway stormwater infiltration systems shall provide a volume of at least one (1) cubic foot of every two (2) square feet of roof or driveway surface.

G. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase, so as to maintain their maximum infiltration capacity.

Section 407. Criteria for Flow Attenuation Facilities.

A. If flow attenuation facilities are employed to assist in the control of peak rates of discharge, their effects must be quantified using the NRCS Technical Release TR 55, "Urban Hydrology for Small Watersheds" or other method approved by the Township Engineer. The effects of the flow attenuation facilities on travel time should be reflected in the calculations.

B. Flow attenuation facilities such as swales and natural depressions should be properly graded to ensure positive drainage and avoid prolonged ponding of water.

C. Swales shall be properly vegetatively stabilized or otherwise lined to prevent erosion.

D. Swales shall be designed according to the recommendations contained in the Commonwealth of Pennsylvania Erosion and Sediment Pollution Control Program Manual, latest edition.

Section 408. Permitted Discharges.

This ordinance authorizes the following discharges unless the municipality or DEP determines that they are significant contributors of pollution to the Waters of the Commonwealth.

A. Water line flushing
B. Landscape irrigation
C. Diverted stream flows
D. Rising ground waters
E. Uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20))
F. Uncontaminated pumped groundwater
G. Discharges from potable water sources
H. Foundation drains
I. Air conditioning condensation
J. Irrigation water
K. Springs

L. Water from crawl space pumps
M. Footing drains
N. Lawn watering
O. Individual residential car washing
P. Flow from riparian habitats and wetlands
Q. Dechlorinated swimming pool discharges
R. Street wash water
S. Discharges from firefighting activities

This ordinance contains provisions for the municipality to prohibit on or more of these individual discharges when said discharge contains a prohibited substance defined in Article 7 herein.

Section 409. Criteria for Stormwater Detention Facilities.

Stormwater detention facilities for the control of stormwater peak discharges shall meet the following minimum requirements.

A. The detention facilities shall be designed such that post-development peak runoff rates from the developed site are controlled to those rates defined by this Ordinance.

B. Outlet Structures:

1. All detention facilities shall be equipped with outlet structures to provide discharge control for the five (5) designated storm frequencies. Provisions shall also be made to safely pass the post-development one hundred (100) year design storm runoff without damaging or impairing the continued function of the facilities. Should any stormwater management facility require a dam safety permit under Pennsylvania DEP Chapter 105 regulations, the facility shall be designed in accordance with those regulations and meet the Pennsylvania DEP regulations of Chapter 105 concerning dam safety, which may require the passage of storms larger than the one hundred (100) year design event.

2. Outlet structures within detention basins shall be constructed of reinforced concrete or an alternate material approved by the Township Supervisors and Township Engineer. With the exception of those openings designed to carry perennial stream flow, design openings shall have childproof, non-clogging trash racks over all openings. Outlet aprons shall be designed and shall extend at a minimum to the toe of the basin slope. Where spillways will be used to control peak discharges in excess of the ten (10) year storm, the control weirs shall be constructed to withstand the pressures of impounded waters and convey flows at computed outlet velocities without erosion.

3. All metal risers, where approved for use, shall be suitably coated to prevent corrosion. A trash rack or similar appurtenance shall be provided to prevent debris from entering the riser. All metal risers shall have a concrete base attached with a watertight connection. The base shall have sufficient weight to prevent

flotation of the riser. An anti-vortex device, consisting of a thin vertical plate normal to the basin berm, shall be provided on the top of all metal risers.

C. Shared-storage facilities that provide detention of runoff for more than one development site within a single subarea are encouraged wherever feasible and provided such facilities meet the criteria contained in this Ordinance. In addition, runoff from the development sites involved shall be conveyed to the facility in a manner that avoids adverse impacts (such as flooding or erosion) to channels and properties located between the development site and the shared-storage facilities. Each developer shall be responsible for the incremental increase in runoff generated by the respective development and incremental construction improvements necessary for the overall facility. Prior approval and consultation with the Township are required before the design of such facilities.

D. Where detention facilities will be utilized, multiple use facilities, such as wetlands, lakes, ballfields or similar recreational/open space uses are encouraged wherever feasible, subject to the approval of the Township and compliance with the Pennsylvania DEP's Chapter 105 regulations. Provision for parking facilities within detention facilities and permanent wet ponds with stormwater management capabilities may also be appropriate. Prior approval and consultation with the Township are required before the design of multiple use facilities. Multiple use facilities shall be constructed so that potentially dangerous conditions are not created.

E. Construction of the detention basins shall conform to the construction specifications of the Pennsylvania DOT, Publication 408 Specifications, latest edition, and Standards for Roadway Construction, RC 1-100, latest edition, unless specifically modified by other provisions of this Ordinance.

F. The design of all detention basins over limestone formations shall include measures to prevent groundwater contamination and, where required, sinkhole formation. Soils used for the construction of the basins shall have moderate to low erodibility factors (i.e., "K" factors of 0.32 or less). The design for any basin greater than four (4) feet in height, measured from the top of the berm to the down slope toe of the abutment, must also contain:

1. Berm soil specifications.

2. A determination if site soils are available for the construction of the berm and of the cutoff trench.

3. An impervious cutoff trench, which shall extend the full length of the downstream berm located in fill.

G. Inlet and outlet structures shall be designed and installed to prevent erosion to the side slopes and the bottom of the detention basins. Energy dissipaters and/or level spreaders shall be installed at points where pipes or drainage ways discharge to or from basins. Generally, outlet pipes designed to carry the pre-development one (1) year storm flow

will be permitted to discharge to a stream with only an energy dissipater; discharges to drainage swales shall be spread with a level spreader or piped to an acceptable point.

H. Design of detention basins shall include the following:

1. Inflow and outflow structures and other structures shall be designed and protected to minimize safety hazards.

2. Emergency Spillways:

a. Any stormwater management facility (i.e., detention basins) designed to store runoff and requiring a berm or earthen embankment and required or regulated by this Ordinance shall be designed to provide an emergency spillways. The emergency spillway shall have capacity to handle a one hundred (100) year post-development return period peak runoff with at least one (1) foot of freeboard above the elevation required to safely pass the one hundred (100) year post-development return period peak runoff. The Township may require more stringent criteria in sensitive areas where stormwater problems presently exist.

b. Any underground stormwater management facility (pipe storage systems) must have a method to bypass flows higher than the required design, a one hundred (100) year post-development return period peak runoff, without structural failure or causing downstream harm or safety risks.

c. Emergency spillways shall be constructed of reinforced concrete or riprap (rock lining) in accordance with this Ordinance. All emergency spillways shall be constructed so that the stormwater management facility berm is protected against erosion. Emergency spillways shall extend along the upstream and downstream berm embankment slopes. Erosion protection shall be provided on the upstream embankment slope a minimum of three (3) feet below the spillway crest elevation. The downstream slope of the spillway, as a minimum, shall be protected from erosion to the toe of the berm embankment. The emergency spillway shall not be located on or discharge over uncompacted earthen fill and/or easily erodible material. Erosion protection shall be provided for the emergency spillway compatible with the computed maximum discharge velocity. The minimum size of rock lining shall be Pennsylvania DOT Class R-4.

d. Rock-filled gabions may be used where combination berm and emergency spillway structures are required to prevent concentrated flows. The Township Engineer may require the use of open concrete lattice blocks, Pennsylvania DOT rock lining or concrete spillways when slopes exceed four (4) feet horizontal to one (1) foot vertical and spillway velocities might exceed Conservation District standards for the particular soils involved.

3. Anti-seepage Collars: Anti-seepage collars shall be installed around the principal outlet pipe barrel within the normal saturation zone of the detention basin berm. The anti-seepage collars and their connections to the pipe barrel shall be watertight. The anti-seepage collars shall extend a minimum of two (2) feet beyond the outside of the principal outlet pipe barrel. The maximum spacing between collars shall be fourteen (14) times the minimum projection of the collar measured perpendicular to the pipe.

4. Slope of Detention Basin Embankment:

   a. The top or toe of any slope shall be located a minimum of twenty (20) feet from any property line. Whenever possible the side slopes and basin shape shall be amenable to the natural topography. Straight side slopes and rectangular basins shall be avoided whenever possible.

   b. Exterior slopes of compacted soil shall not exceed three (3) feet horizontal to one (1) foot vertical, and may be further reduced if the soil has unstable characteristics.

   c. Interior slopes of the basin shall not exceed two and one-half (2-1/2) feet horizontal to one (1) foot vertical, except with approval of the Township Engineer and Township Supervisors.

5. Width of Berm: The minimum top width of the detention basin berms shall be twelve (12) feet. The Township Engineer and Township Supervisor, at their sole discretion, may require a wider berm if circumstances warrant.

6. Detention facilities shall be located to facilitate maintenance, considering the frequency and type of equipment that will be required. Control and removal of debris both in the facility and in all inlet or outlet devices shall be a design consideration. Provisions shall be made for trapping sediment and debris upstream of the facilities.

7. Slope of Basin Bottom: In order to ensure proper drainage of the detention basin, a minimum grade of two (2%) percent shall be maintained for the bottoms of all basins used exclusively for peak runoff control. Water quality or recharge basins with infiltration systems incorporated into them may have a minimum grade of one-half (0.5%) percent. A subsurface drainage system may be required depending on the location of the pond bottom relative to groundwater levels.

8. The distance from the highest free water surface of any detention basin or other drainage facility to a dwelling unit shall be at least fifty (50) feet.

9. The perimeter of all stormwater detention basins shall be completely fenced with a fence having a minimum height of six (6) feet. Said fence shall be constructed of chain link or similar material as may be approved by the Township. A double

gate having a minimum width of twelve (12) feet shall be installed to provide access to the stormwater detention basin. The Developer shall furnish a gate lock of a type acceptable to the Township.

10. To facilitate access, maintenance and inspection all stormwater detention basins shall be provided with a stabilized access roadway having a minimum width of twelve (12) feet and consisting of eight (8) inches, minimum compacted thickness, of Pennsylvania DOT select granular material (2RC), or other material approved by the Township Engineer and Township Supervisors. Where the proposed basin is not adjacent to a proposed or existing public right-of-way or is not accessible due to physical constraints, as determined by the Township Supervisors and Township Engineer, the access roadway shall be placed within a passable access easement, specifying rights of entry, not less than thirty (30) feet wide, as approved by the Township Engineer and Township Supervisors, who may require a wider easement if circumstances warrant. Access easements shall provide for vehicle and equipment ingress and egress on grades of less than five (5) percent for carrying out inspection or maintenance activities. All easement agreements shall be recorded with a reference to the easement indicated on the site plan. The format and content of the easement agreement shall be reviewed by the Township Supervisors, the Township Solicitor and Township Engineer and approved by the Township Supervisors.

11. To facilitate access, maintenance and inspection all stormwater detention basins shall be provided with a stabilized roadway on the entire berm of the basin, except across the emergency spillway. This roadway shall have a minimum width of twelve (12) feet and shall consist of eight (8) inches, minimum compacted thickness, of Pennsylvania DOT select granular material (2RC), or other material approved by the Township Engineer and Township Supervisors. Where required by the Township, this roadway shall include area(s) for turning vehicles and equipment around.

12. Landscaping: Landscaping shall be provided for the stormwater management facilities that harmonizes with the surrounding area. Vegetative cover shall be provided for all areas disturbed by the construction of the stormwater management facilities, including the interior and exterior side slopes of the detention basin. Landscaping and planting specifications shall be provided for all stormwater management facilities and shall be specific for each type of facility. Access, maintenance and inspection easements shall stipulate that no trees, shrubs, structures, excavation or fill shall be placed and no regrading be performed within the area of the easement without written approval from the Township Supervisors upon review by the Township Engineer. Upon approval of the Township Engineer and Township Supervisors, such landscaping may be placed in these easements, provided it does not impede access.

I. Construction of Detention Facilities:

1. Upon completion of the stormwater detention facility and prior to approval of the facility by the Township, the Applicant or Developer shall provide the Township a certification from an engineer licensed as such by the Commonwealth of Pennsylvania, certifying that said facility was constructed in accordance with this Ordinance and the plans approved by the Township.

2. Upon completion of the stormwater detention facility and prior to approval of the facility by the Township, the Applicant or Developer shall provide the Township with an as-built topographic survey of the facility property sealed by an engineer or surveyor licensed as such by the Commonwealth of Pennsylvania.

3. Detention facilities shall be installed prior to or concurrent with any earthmoving or land disturbances that they will serve. The phasing of the construction of the detention facilities shall be noted in the project narrative and on the plans. Detention facilities that include water quality or recharge components shall have those components installed in such a manner as not to disturb or diminish their effectiveness.

4. Construction specifications pursuant to Section 504.E of this Ordinance must be provided for all embankments for approval of the Township Supervisors and Township Engineer.

5. During the construction of the facility, the Applicant/Developer shall employ an independent materials testing laboratory, approved by the Township Engineer and Township Supervisors, to conduct soil and/or soil compaction tests on all embankments. Said laboratory shall present a certification to the Township certifying that the embankment was constructed in accordance with Section 504.E of this Ordinance and Section 206 of Pennsylvania DOT Publication 408 Specifications. Compaction test reports shall be kept at the project site and be subject to review at all times by the Township with copies being forwarded to the Township Engineer upon request.

6. When rock is encountered during the excavation of the facility, it shall be removed to an elevation of at least twelve (12) inches below the proposed facility bottom. If a manufactured liner is to be installed, the rock shall be removed to an elevation of at least thirty (30) inches, or as required by the liner manufacturer. All exposed cracks and fissures shall be structurally filled using a method approved by the Township Engineer and Township Supervisors.

7. Temporary and permanent grasses or other stabilization measures shall be established on the sides and bottom of all earthen detention facilities within fifteen (15) days of construction.

J. Alternative Detention Facilities. Alternative stormwater detention facilities including rooftop, subsurface basins or tanks and in-pipe detention storage, or other approved alternative designs may be permitted by the Township. Prior approval and consultation with the Township are required before the design of alternative facilities.

Section 410. Criteria for Collection/Conveyance Facilities.

A. All stormwater runoff collection/conveyance facilities, whether storm sewers or other open or closed channels, shall be designed in accordance with the following computational methods:

1. Computational methods (models) for storm drainage collection/conveyance design shall be based upon site or watershed drainage area as follows:

a. Up to 200 acres in size:	Rational Method
b. Between 200 acres and 1.5 square miles in size:	HEC-1, PSRM or TR-20
c. Over 1.5 square miles in size:	PSU-IV with the carbonate adjustment factor at the discretion of the Township Engineer

d. Design procedures of HEC-22, "Urban Drainage Design Manual", are recommended.

2. Rational coefficients used shall be from Rawls, et al. (1981), Pennsylvania DOT Design Manual 2-10 or shall be the Aron curves to convert CN's to C. If the Aron curves are used, all CN's must be applicable to the soil HSG as identified by the NRCS. The design engineer may choose to use the following rational coefficients without regard to soil HSG for small sites. However, it is recommended that the coefficients be used only for storm sewers up to twenty-four (24) inches in diameter. The use of these conservative coefficients shall solely be the choice of the design engineer.

All impervious areas:	C = 0.95
All pervious areas:	C = 0.30

3. The Tc can be computed by any method that best serves the subject watershed. However, the NRCS's segmented method is not recommended for use with drainage areas that are predominately undeveloped and are greater than one hundred (100) acres in size.

4. For drainage areas smaller than five (5) acres in size, a Tc of five (5) minutes may be assumed at the discretion of the design engineer without needing to provide supporting documentation.

5. Precipitation values shall be those reflected in the Pennsylvania DOT's IDF curves.

6. All collection/conveyance facilities shall be designed at a minimum to convey the post-development runoff associated with the one hundred (100) year return period event without surcharging inlets and without damage to the drainage structures, properties, buildings or roadways and, in the case of man-made channels or swales, with freeboard of at least six (6) inches. Storm sewers required to convey flows to a stormwater management detention basin must be designed to convey the post-development runoff associated with the one hundred (100) year return period event. Man-made channels or swales required to convey flows to a stormwater management detention basin must be designed to convey the post-development runoff associated with the one hundred (100) year return period event with a freeboard of at least six (6) inches.

7. Storm drainage conveyance system stability (swales, open channels and pipe discharge aprons) shall be computed using a one hundred (100) year return period event and/or as required by Pennsylvania DEP Chapter 102, whichever is greater. Any swale or open channel having a slope equal to or greater than five (5) percent shall be designed using shear stress methods.

8. Collection/conveyance facilities within Commonwealth or Federal rights-of-way or that falls under the design criteria any higher authority must meet the requirements of that agency in addition to the minimum requirements of this Ordinance.

B. Wherever storm sewers are proposed, they shall comply with the following criteria:

1. Where practical, storm sewers shall be designed to traverse under seeded and planted areas. If constructed within ten (10) feet of roadway pavement, sidewalks or other surfaced areas, storm sewers shall have a narrow trench and maximum compaction of backfill to prevent settlement of the superimposed surface or development. When located in undedicated land, storm sewers shall be placed within an easement not less than twenty (20) feet wide, as approved by the Township Engineer and Township Supervisors, who may require additional width of easement as circumstances warrant. Where practicable, easements shall be parallel with and conjunctive to property lines. All easement agreements shall be recorded with a reference to the easement indicated on the site plan. The format and content of the easement agreement shall be reviewed by the Township Supervisors, Township Solicitor and Township Engineer and approved by the Township Supervisors.

2. Storm sewers shall be installed after excavating and filling in the area to be traversed is completed, unless the storm sewer is installed in the original ground with a minimum of four (4) feet of cover and adequate protection of the storm sewer is provided during the fill construction.

3. Storm sewers shall be designed with cradle when traversing fill areas of indeterminate stability and with anchors when gradient exceeds twenty (20) percent. It shall be the responsibility of the design engineer to prepare a detailed cradle and/or anchor design. The anchors shall be spaced as follows:

   a. Not over thirty-six (36) feet center to center on grades twenty (20) percent and up to thirty-five (35) percent.

   b. Not over twenty-four (24) feet center to center on grades thirty-five (35) percent and up to fifty (50) percent.

   c. Not over sixteen (16) feet center-to-center on grades fifty (50) percent and greater.

4. Storm sewers shall be backfilled with Pennsylvania DOT No. 2B coarse aggregate when traversing under paved areas and shoulder areas.

5. Storm sewer pipe, trenching, bedding and backfilling requirements shall conform to the requirements of the Township or, when not specified by the Township, Pennsylvania DOT Publication 408 Specifications and Standards for Roadway Construction, RC 1-100, latest edition, shall govern.

6. Storm sewers and culverts shall be constructed using smooth interior corrugated polyethylene pipe and fittings meeting the requirements of AASHTO-M294, as amended or supplemented to date. All corrugated polyethylene pipe shall be Type S. The corrugated polyethylene pipe shall be suitable for use under H20 and E80 live loads, or with fill heights in excess of fifty (50) feet. The minimum pipe size shall be fifteen (15) inch diameter. Where the Township Supervisors and Township Engineer deem it necessary because of special land requirements, others types of pipe may be approved.

7. Accessible drainage structures shall be located on a continuous storm sewer system at all vertical dislocations, at all locations where a transition in storm sewer pipe sizing is required, at all vertical and horizontal angle points exceeding five (5) degrees and at all points of convergence of two (2) or more influent storm sewers. The construction locations of accessible drainage structures shall be as indicated on the land development plan approved by the Township.

8. Storm inlets and structures shall be designed to be adequate, safe, self-cleaning and unobtrusive and consistent with Township standards. Inlet types and inlet assemblies shall conform to the Pennsylvania DOT, “Standards for Roadway Construction”, as approved by the Township Supervisors and Township Engineer.

   a. Inlets shall, as a minimum, be located at the lowest point of the roadway intersections to intercept the stormwater before it reaches pedestrian

crossings; or at sag points of vertical curves in the roadway alignment that provide a natural point of ponding of surface stormwater.

b. Where the Township Supervisors and Township Engineer deem it necessary because of special land requirements, special inlets may be approved.

c. The interval between inlets collecting stormwater runoff shall be determined in accordance with Pennsylvania DOT Design Manual 2, Chapter 10, Section 5, "Capacity of Waterway Areas", latest edition.

d. In curbed sections, inlets shall be provided to control the encroachment of water on the pavement. When inlets are used in the storm drainage system within the right-of-way limits of a roadway in lieu of manholes, inlets shall be spaced to prevent the encroachment of water on the roadway pavement.

e. Inlets shall be Pennsylvania DOT Type C or M with cast-in-place reinforced concrete or precast concrete tops.

f. Inlets on grade cannot assume a sumped condition (i.e., top of inlet casing set below pavement surface) unless the design engineer can guarantee the sump will be provided for in construction.

9. Grates, conforming to the requirements of the Township Supervisors and Township Engineer, shall be provided for all stormwater inlets and other entrance appurtenances.

10. Manholes shall be designed so that the top shall be at finished grade and sloped to conform to the slope of the finished grade. Top castings of structures located in roads or parking areas shall be machined or installed to preclude "clanking."

11. Where a proposed storm sewer connects with an existing storm sewer system, the Developer shall demonstrate that sufficient capacity exists in the downstream system to handle the additional flow. The Developer shall furnish a letter from the owner of the existing storm sewer system approving the connection of the proposed storm sewer system.

12. Storm sewer outfalls and culverts, including driveway cross pipes, shall be equipped with either reinforced concrete headwalls or pipe end sections and energy dissipation devices to prevent erosion and conform with applicable requirements of the Pennsylvania DEP for stream encroachments (Chapter 105 of Pennsylvania DEP Rules and Regulations).

13. Collection/conveyance facilities should not be installed parallel and within twenty-five (25) feet of the top or bottom of a major embankment to avoid the possibility of failing or causing the embankment to fail.

14. Where drainage swales or open channels are used, they shall be suitably lined to prevent erosion and designed to avoid excessive velocities. Acceptable velocities shall be based upon criteria included in the Pennsylvania DEP Erosion and Sediment Pollution Control Program Manual, latest edition.

15. Rock lining shall conform to Section 850, "Rock Lining", of Pennsylvania DOT Publication 408 Specifications. The minimum size of rock lining shall be Class R-4. Maximum velocities for rock lining gradations shall be 9.0 feet per second for R-4, 11.5 feet per second for R-5, 13.0 feet per second for R-6 and 14.5 feet per second for R-7. Reno mattress and gabions shall be installed for velocities between 14.51 feet per second and 22 feet per second.

16. Stormwater drainage will not be permitted to cross intersections or the crown of the roadway. Trench drains shall be used to control stormwater drainage from entrances to a roadway, including, but not limited to: driveways, street approaches, access approaches to businesses, parking areas.

17. Stormwater drainage, including roof drains, shall not be connected to the sanitary sewer system.

18. All springs and sump pump discharges shall be collected and conveyed to a stormwater collection/conveyance/control system or natural watercourse in accordance with the approved stormwater management plan for the development site so as not to flow onto the roadways or into the sanitary sewer system.

ARTICLE 5

OPERATION AND MAINTENANCE

Section 501. Agreement.

The municipality shall require the Applicant to enter into an agreement for the operation and maintenance of the stormwater management BMP's proposed. Said agreement shall be drafted by the municipal Solicitor given the following parameters:

A. Operation and Maintenance (O&M) agreements for stormwater management BMPs shall be required for BMP's of a specific size and complexity.

B. O&M agreements shall include a schedule, and detailed instructions on what tasks must be performed, and the frequency of performance.

C. O&M responsibilities of the Applicants during construction.

D. O&M responsibilities of landowners for PCSM BMPs?

E. Provisions for a performance guarantee during construction and for post-construction operation and maintenance of the BMPs.

F. The O&M agreement shall be recorded as a restrictive deed covenant that runs with the land.

Section 502. Maintenance Responsibilities.

A. The maintenance plan for stormwater management facilities located on the development site shall establish responsibilities for the continuing operation and maintenance of all proposed stormwater control facilities, consistent with the following principles:

1. If a development consists of structures or lots which are to be separately owned and in which streets, storm sewers and other public improvements are to be dedicated to the Township, stormwater control facilities shall be dedicated to and maintained by the Township.

2. If a development site is to be maintained in single ownership or if storm sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities shall be the responsibility of the owner or private management entity.

B. The Township Supervisors, upon recommendation of the Township Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The Township Supervisors reserve the right to accept the ownership and operating responsibility for any or all of the stormwater management controls and to determine the terms and conditions under which it will accept ownership and operating responsibility.

Section 503. Maintenance Agreement for Privately Owned Stormwater Facilities.

A. Prior to final approval of the site's stormwater management plan, the Applicant and Township shall execute a maintenance agreement covering all stormwater control facilities that are to be privately owned. The maintenance agreement shall be recorded with the final subdivision/land development plan for the site. The agreement shall stipulate that:

1. All facilities shall be maintained in accordance with the approved maintenance schedule and in a safe and attractive manner.

2. Easements and/or rights-of-way shall be conveyed to the Township to assure access for periodic inspections by the Township and maintenance if required.

3. The name, address and telephone number of the person or company responsible for maintenance activities shall be filed with the Township. In the event of a

change, new information will be submitted to the Township within ten (10) days of the change.

4. If the facility owner fails to maintain the stormwater control facilities, the Township may perform the necessary maintenance work or corrective work following due notice by the Township to the facility owner to correct the problem(s). The facility owner shall reimburse the Township for all costs within thirty (30) days of the date of the Township's cost statement and, where appropriate, municipal liens shall be imposed on any assets within the subdivision/land development.

B. Other items shall be included in the agreement where determined by the Township to be necessary to guarantee the satisfactory maintenance of all stormwater control facilities.

Section 504. <u>Township Stormwater Maintenance Fund.</u>

A. Persons installing stormwater storage facilities shall be required to pay a specified amount to the Township Stormwater Maintenance Fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:

1. If the storage facility is to be privately owned and maintained, the deposit shall cover the cost of periodic inspections performed by the Township for a period of ten (10) years, as estimated by the Township Engineer. After that period of time, the Township will perform the inspections at the expense of the property owner. The facility owner shall reimburse the Township for all inspection costs within thirty (30) days of the date of the Township's cost statement and, where appropriate, municipal liens shall be imposed on any assets within the subdivision/land development.

2. If the storage facility is to be owned and maintained by the Township, the deposit shall cover the estimated costs for maintenance and inspections for ten (10) years. The Township Engineer will establish the estimated cost utilizing information submitted by the applicant.

3. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Township Engineer shall determine the present worth equivalents that shall be subject to the approval of the Township.

B. If a storage facility is proposed that also serves as a recreation facility (e.g., ballfield, lake), the Township may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purposes.

C. If in the future a storage facility (whether publicly or privately owned) is eliminated due to the installation of storm sewers or other storage facility, the unused portion of the maintenance fund deposit will be applied to the cost of abandoning the facility and

connecting to the storm sewer system or other facility. Any amount of the deposit remaining after the costs of abandonment are paid will be returned to the depositor.

ARTICLE 6

APPLICATION, FEES AND EXPENSES

Section 601. Application.

A. Application Submission

1. All filing, fees shall be submitted to the Township in the amount as established from time to time by resolution of the Township.

2. Two (2) copies of the Stormwater Management Site Plan shall be filed along with the filling fee with the Township Secretary.

B. Administrative review

1. One copy of the Stormwater Management Site Plan shall be provided to the Township Engineer by the Secretary and the other copy shall be maintained on file at the Township Building for review and inspection by the public.

C. Technical review

1. The Township Engineer shall review the Stormwater Management Site Plan and provide comments to the Township and the Applicant.

2. If the Stormwater Management Site Plan is found to be defective based on the review by the Township Engineer or by the Township, said deficiencies be provided to the Applicant in written.

3. Said Stormwater Management Site Plan shall be revised and re-filed with the Township.

D. Meetings

1. The Applicant shall be notified by the Secretary of the meeting date and time when the Township will consider the Stormwater Management Site Plan.

2. At said meeting, the Township shall take formal action on the Stormwater Management Site Plan in one of the following ways:

a. Approved the Stormwater Management Site Plan.

b. Approve the Stormwater Management Site Plan with conditions specifically identified in the minutes of the meeting.

c. Reject the Stormwater Management Site Plan.

E. Project inspections

The Township and its designated representative shall conduct site inspections during the BMP construction and during the operational period of the constructed BMP's.

F. Other costs

If for any reason the Township determines that geotechnical or materials testing is required; or any other cost not so defined herein, the same shall be reimbursed by the Applicant to the Township.

Section 602. Fee and Expenses.

A. General: All filing, inspection and engineering fees shall be submitted to the Township in the amount as established from time to time by resolution.

B. Review Fees:

1. Review fees shall include the reasonable and necessary charges by the Township's professional consultants, including but not limited to, the Township Solicitor and the Township Engineer for review and reports to the Township, and shall be set by resolution. Such review fees shall be reasonable and in accordance with the ordinary and customary charges by the Township Solicitor, Township Engineer or Township consultant for similar service in the community, but in no event shall the fees exceed the rate or cost charged by the Township Solicitor, Township Engineer or Township consultant to the Township when fees are not reimbursed or otherwise imposed on Applicants.

2. In the event the Applicant disputes the amount of any such review fees, the Applicant shall, within ten (10) days of the billing date, notify the Township that such fees are disputed, in which case the Township shall not delay or disapprove a subdivision or land development application due to the Applicant's request over disputed fees.

3. In the event that the Township and the Applicant cannot agree on the amount of the fees that are reasonable and necessary, then the fees shall be recalculated and recertified by another professional engineer licensed as such by the Commonwealth of Pennsylvania and chosen mutually by the Township and the Applicant or Developer. In the case of a dispute involving legal fees, the same shall be submitted to the appropriate committee of the Blair County Bar Association. The estimate certified by the appointed engineer or the Bar

Association, as the case may be, shall be presumed fair and reasonable and shall be the final estimate. In the event that an independent engineer is chosen, fees for the services of said engineer shall be paid equally by the Township and the Applicant or Developer.

4. Review fees for administrative and legal services necessary for the project, including, but not limited to, processing of the plans and supporting documents, preparation of the Developer's Agreement and review of the financial security documents shall be paid solely by the Applicant or Developer prior to final approval of the plans. Said costs shall be submitted to the Applicant or Developer, in written form deemed appropriate by the Township, and shall be paid in full prior to final approval plan.

ARTICLE 7

PROHIBITIONS

This ordinance prohibits the following discharges to the Waters of the Commonwealth.

Section 701. Discharging non-stormwater into any stormwater conveyance system or into any Waters of the Commonwealth.

Section 702. Connecting any non-stormwater conveyance to a stormwater conveyance.

Section 703. Alternation of stormwater management BMPs without written approval by the municipality.

Section 704. This ordinance prohibits any polluted discharge unless the municipality or DEP determines that said discharge is not a significant contributor of pollution to Waters of the Commonwealth.

ARTICLE 8

ENFORCEMENT AND PENALTIES

Section 801. Right of Entry.

Upon presentation of proper credentials, duly authorized representatives of the Township may enter at reasonable times upon any property to investigate or ascertain the condition of the subject property in regard to an aspect regulated by this Ordinance.

Section 802. Inspection.

A. BMPs should be inspected by the Applicant, landowner, or the landowner's designee according to the following list of minimum frequencies:

1. Annually for the first 5 years.

2. Once every 3 years thereafter.

3. During or immediately after the cessation of a 10-year or greater storm.

B. The Township Engineer or a designated representative of the Township shall inspect the construction of the temporary and permanent stormwater management system for the development site. The Applicant or Developer shall notify the Township Engineer at least forty-eight (48) hours in advance of the completion of the following key development phases:

1. At the completion of preliminary site preparation including stripping of vegetation, stockpiling of topsoil and construction of temporary stormwater management and erosion control facilities.

2. At the completion of rough grading but prior to placing topsoil, permanent drainage or other site development improvements and ground covers.

3. During construction of the permanent stormwater management facilities at such times as specified by the Township Engineer.

4. Completion of permanent stormwater management facilities including established ground covers and plantings.

5. Completion of final grading, vegetative control measures or other site restoration work done in accordance with the approved plan and permit.

C. No work shall commence on any subsequent phase until the preceding phase has been inspected and approved by the Township. If there are deficiencies in any phase, the Township Engineer shall issue a written description of the required corrections and stipulate the time by which they must be made.

D. If during construction, the contractor or Applicant or Developer identifies any site condition, such as subsurface soil conditions, alterations in surface or subsurface drainage which could affect the feasibility of the approved stormwater management facilities, he/she shall notify the Township Engineer within twenty-four (24) hours of the discovery of such condition and request a field inspection. The Township Engineer shall determine if the condition requires a stormwater plan modification.

E. The Township, at its sole discretion, may require special soil and soil compaction tests, core borings, full-time inspectors and/or similar measures to ensure the stormwater management facilities are properly constructed. All costs of any such measures shall be borne solely by the Developer.

Section 803. Compliance and Enforcement.

A. It shall be unlawful for a person to undertake any Regulated Activity except as provided in an approved Stormwater Management Site Plan, unless specifically exempted in Section 304.

B. It shall be unlawful to modify, remove, fill, landscape, or alter any BMP, facilities, areas, or structures, without the written approval of the Municipality.

C. Inspections regarding compliance with the Stormwater Management Site Plan are a responsibility of the municipality.

Section 804. Suspend and Revoke Permits.

A. Any approval or permit issued by the Municipality may be suspended or revoked for:

1. Non-compliance with or failure to implement any provision of the approved Stormwater Management Site Plan or Operation and Maintenance Agreement.

2. A violation of any provision of this Ordinance or any other applicable law, Ordinance, rule or regulation relating to the Regulated Activity.

3. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others.

B. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the Municipality may provide a limited time period for the owner to correct the violation. In these cases, the Municipality will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the Municipality may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

Section 805. Reinstate Suspended Permits.

A. A suspended approval may be reinstated by the Municipality when:

1. The Municipality has inspected and approved the corrections to the violations that caused the suspension.

2. The Municipality is satisfied that the violation has been corrected.

B. An approval that has been revoked by the Municipality cannot be reinstated. The Applicant may apply for a new approval under the provisions of this Ordinance.

Section 806. Penalties.

A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and upon conviction shall be subject to a fine of not more than $1,000.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.

B. In addition, the Municipality, may institute injunctive, mandamus or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

Section 807. Notification.

In the event that the Applicant, Developer or his/her agent fails to comply with the requirements of this Ordinance or fails to conform to the requirements of any permit, a written notice of violation shall be issued. Such notification shall set forth the nature of the violations(s) and establish a time limit for correction of the violation(s). Upon failure to comply within the time specified, unless otherwise extended by the Township, the Applicant, Developer or his/her agent shall be subject to the enforcement remedies of this Ordinance.

Section 808. Preventive Remedies.

A. In addition to other remedies, the Township may institute and maintain, appropriate actions at law or in equity to restrain, correct or abate a violation, to prevent unlawful construction, to recover damages and to prevent illegal occupancy of a building or premises.

B. In accordance with the Pennsylvania Municipalities Planning Code (Section 515.1), the Township may refuse to issue any permit or grant approval to further improve or develop any property that has been developed in violation of this Ordinance.

Section 809. Enforcement Remedies.

A. Any person, who has violated or permitted the violation of the provisions of this Ordinance shall, upon being found liable therefore in a civil enforcement proceeding commenced by the Township, pay a fine of not less than $500.00 and not more than $1,000.00 plus court costs, including reasonable attorneys' fees and engineers and other expert witness fees incurred by the Township. No judgment shall commence or be imposed, levied or be payable until the date of the determination of a violation by a court of competent jurisdiction.

B. If the defendant neither pays nor timely appeals the judgment, the Township may enforce the judgment pursuant to applicable rules of civil procedure.

C. Each day that a violation continues shall constitute a separate violation unless the court of competent jurisdiction further determines that there was a good faith basis for the person violating the Ordinance to have believed that there was no such violation. In such case there shall be deemed to have been only one (1) such violation until the fifth day following the date of the initial determination of a violation; thereafter each day that a violation continues shall constitute a separate violation.

D. All judgments, costs and reasonable attorneys' fees collected for the violation of this Ordinance shall be paid over to the Township.

E. A court of competent jurisdiction, upon petition, may grant an order of stay, upon cause shown, tolling the per diem fine pending a final adjudication of the violation and judgment.

F. Nothing contained in this section shall be construed or interpreted to grant to any person or entity other than the Township the right to commence any action for enforcement pursuant to this section.

Section 810. Additional Remedies.

In addition to the above remedies, the Township may also seek remedies and penalties under applicable Pennsylvania statutes, or regulations adopted pursuant thereto, including but not limited to the Storm Water Management Act (32 P.S. Section 693.1-693.27) and the Erosion and Sedimentation Regulations (25 Pennsylvania Code, Chapter 102). Any activity conducted in violation of this Ordinance or any Pennsylvania approved watershed stormwater management plan is declared a public nuisance by the Township and abatable as such. Furthermore, the Township may also seek injunctive relief through a Court Action of Equity with reasonable attorneys' fees and costs to be borne by the violator if the Court so finds.

ARTICLE 9

REFERENCES

Appendix A Operation and Maintenance Agreement

Appendix B Worksheets For Computing Expected Pollutants Loads From Special Land Uses

ARTICLE 10

STORMWATER MANAGEMENT PLAN REQUIREMENTS

Section 1001. General Requirements.

No final subdivision/land development plan shall be approved, no permit authorizing construction shall be issued, or an earth moving or land disturbance activity initiated until the

final stormwater management plan for the site is approved in accordance with the provisions of this Ordinance.

Section 1002. General Exemptions.

The following activities identified below are specifically exempt from the Stormwater Management Plan preparation provisions of this Ordinance unless the Township determines that the activity is likely to, has, or will negatively impact the purposes and objectives set forth in Article I of this Ordinance. For example, where an activity occurs on very steep terrain or where an activity is the latest in a series of incremental developments expected to cause pronounced stormwater impacts, it may be that these activities will be required to comply with the plan preparation requirements contained herein even though their activities qualify under the exemptions listed in this section. Upon making such determination, the Township shall give notice in writing to the landowner and the Developer, if known, and direct the landowner and any Developer to immediately cease and desist all activity and affirmatively comply with the formal plan, submission, and approval procedures of this Ordinance. Exemption shall not relieve the Applicant from implementing such measures as are necessary to protect health, safety and property. These measures include adequate and safe conveyance of stormwater on the site and as it leaves the site.

A. Any Regulated Activity having impervious coverage of less than ten (10) percent of the total site area up to a maximum impervious area of 1,000 square feet. However, adequate and safe conveyance of stormwater from the site must be provided. For developments that are to be constructed in phases, the sum of all phases must be considered in establishing exemption eligibility. Impervious cover shall include, but not be limited to, any new roof, parking areas, driveway, streets, sidewalks and bikeways.

B. Land disturbances associated with the construction or alteration of existing one and two family dwellings provided that the does not alter any stormwater condition beyond the boundaries of the lot or alter provisions of a previously approved Stormwater Plan of the lot or encompassing subdivision. Multiple (>2) lot subdivisions cannot be exempted.

C. Use of land for gardening for home consumption.

D. Agriculture when operated in accordance with a conservation plan or erosion and sedimentation control plan approved by the Conservation District. The agricultural activities such as growing crops, rotating crops, filling of soil and grazing animals and other such activities are specifically exempt from complying with the requirements of this Ordinance when such activities are conducted in accordance with a conservation plan prepared by the Conservation District. The construction of buildings, parking lots or any activity that may result in impervious surface that increases the rate and volume of stormwater runoff shall comply with the requirements of this Ordinance.

E. Forest management operations that are following the Pennsylvania DEP's management practices contained in its publication "Soil Erosion and Sedimentation Control Guidelines for Forestry" and are operating under an erosion and sedimentation control plan.

F. Any site less than one (1) acre in size that decreases the total site impervious area following development and is not located in an area where existing downstream stormwater problems are known to occur.

The diversion or piping of any natural or man-made stream channel and/or for the installation of stormwater management facilities or modifications thereto cannot be exempted. These activities always require the submission of a Stormwater Management Plan. Exemptions A and B cannot be combined for use in small residential subdivisions.

Section 1003. <u>Stormwater Management Plan Contents.</u>

A. General Format: The stormwater management plan shall be drawn on sheets no larger than 24" x 36" with a graphics scale of not less than 1 inch = 100 feet. Plans intended for recording purposes shall not be larger than 16" x 22". All sheets shall contain a title block with: name and address of applicant and engineer, scale, north arrow, legend, date of original preparation, and date and description of each revision to the plan sheet.

B. Existing and Proposed Features: The plan shall show the following under both pre-development and post-development conditions:

1. Watershed location - Provide a key map showing the location of the development site within the watershed(s) and watershed subarea(s). On all site drawings, show the boundaries of the watershed(s) and subarea(s) as they are located on the development site and identify watershed names(s) and subarea number(s).

2. Floodplain boundaries - Identify the one hundred (100) year floodplains on the development site (as appropriate) based upon the Township Flood Insurance Study maps.

3. Natural features - Show all bodies of water (natural or artificial), watercourses (permanent and intermittent), swales, wetlands and other natural drainage courses on the development site, or which will be affected by runoff from the development.

4. Soils - Provide an overlay showing soil types and boundaries within the development site (consult the Conservation District, NRCS and U.S. Geological Survey for information).

5. Contours - Show existing and final contours at intervals of two (2) feet; in areas with slopes greater than fifteen (15) percent, five (5) foot contour intervals may be used.

6. Land cover - Show existing and final land cover classifications as necessary to support and illustrate the runoff calculations performed.

7. Drainage area delineations - Show the boundaries of the drainage areas employed in the runoff calculations performed.

8. Stormwater management controls - Show any existing stormwater management or drainage controls and/or structures, such as storm sewers, swales, culverts, etc. which are located on the development site, or which are located off-site but will be affected by runoff from the development.

C. Professional Certification: The principal in charge of preparing the stormwater management plan (including all calculations) shall be a professional engineer registered in the Commonwealth of Pennsylvania and the stormwater management plan shall be sealed by a professional engineer registered in the Commonwealth of Pennsylvania with training and expertise in hydrology and hydraulics. The Township may require documentation of qualifications.

D. Runoff Calculations: Calculations for determining pre- and post-development discharge rates and for designing proposed stormwater control facilities must be submitted with the stormwater management plan. All calculations shall be prepared using the methods and data prescribed by this Ordinance.

E. Stormwater controls: All proposed stormwater runoff control measures must be shown on the plan including methods for collecting, conveying and storing stormwater runoff on-site, which are to be used both during and after construction. Erosion and sedimentation controls shall be shown in accordance with Article 6 of this Ordinance. The plan shall provide information on the exact type, location, sizing, design and construction of all proposed facilities and their relationship to the existing watershed drainage system. The plan shall include technical specifications for materials and methods to be used in the construction of the stormwater management facilities.

1. If the development is to be constructed in stages, the applicant must demonstrate that stormwater facilities will be installed to manage stormwater runoff safely during each-stage of development.

2. A schedule for the installation of all temporary and permanent stormwater control measures and devices shall be submitted.

3. If appropriate, a justification should be submitted as to why any preferred stormwater management techniques are not proposed for use.

F. Easements, right-of-ways, deed restrictions: All existing and proposed easements and rights-of-way for drainage and/or access to stormwater control facilities shall be shown along with any areas subject to special deed restrictions relative to or affecting stormwater management on the development site.

G. Other permits/approvals: A list of any approvals/permits relative to stormwater management that will be required from other governmental agencies (Pennsylvania DEP

Chapter 105 and 106 permits and/or NPDES permit) and anticipated dates of submission/receipt should be included with the stormwater plan submission. Copies of permit applications shall be furnished to the Township.

H. Maintenance program: The proposed maintenance plan for all stormwater control facilities shall:

1. Identify the proposed ownership entity (e.g., Township, property owner, private corporation, homeowner's association, or other entity).

2. Identify the type of maintenance, probable frequencies, personnel and equipment requirements and estimated annual maintenance costs.

3. Identify the method for financing the continuing operation and maintenance of the facility if the facility is to be owned by other than a governmental agency.

4. Include copies of any legal agreements required to implement the maintenance program and, if applicable, copies of the maintenance agreement as required by Article 7.

I. Financial Guarantees: Submit financial guarantees in accordance with the provisions of Article 11 of this Ordinance.

J. Evidence of notification of downstream municipality: The Applicant or Developer shall notify (by certified mail) the municipality immediately downstream of the Township that a stormwater control plan has been prepared and submitted. This letter should identify the location of the proposed development site and the name of the affected stream. The Developer shall submit a copy of this letter and a copy of the certified mail return receipt.

ARTICLE 11

PLAN REVIEW PROCEDURES

Section 1101. Pre-application Phase.

A. Before submitting the stormwater management plan, Applicants shall consult with the Township Engineer on the applicable regulations and techniques for safely managing runoff from the development site. The Township may also be helpful in providing necessary data for the stormwater management plan.

B. Applicants are encouraged to submit a sketch plan with a narrative description of the proposed stormwater management controls for general guidance and discussion with the Township and other agencies.

C. The pre-application phase is not mandatory; any review comments provided by the Township are advisory only and do not constitute any legally binding action on the part of the Township.

Section 1102. Stormwater Management Plan Reviews.

A. Submission of plans: Stormwater management plans shall be submitted with the preliminary and final subdivision/land development submissions.

B. Notification of affected municipalities: The Developer is required to notify municipalities adjacent to the development site that a stormwater control plan has been submitted. Copies of the plans will be made available to the municipalities upon request. The Township Engineer and county agencies in their reviews will consider comments received from any affected municipality.

C. Township Engineer's review: The Township Engineer shall recommend approval or disapproval of the stormwater management plan based upon the requirements of the Township ordinances. The Township Engineer shall submit a written report to the Township along with supporting documentation, stating its reasons for approval or disapproval.

D. Permits required from other governmental agencies: Where the proposed development requires any permit from the Pennsylvania DEP, the Pennsylvania DOT, the Conservation District or any other governmental agency having jurisdiction, the final stormwater management plan approval shall not be granted, no construction shall be started and no building permits shall be issued until such permits are received and copies filed with the Township.

Section 1103. Status of the Stormwater Management Plan after Final Approval.

A. Upon final stormwater management plan approval, receipt of all necessary permits, and recording of the final subdivision and land development plan in the Blair County Recorder of Deeds Office, the Applicant may commence to install or implement the approved stormwater management controls.

B. If site development or building construction does not begin within two (2) years of the date of final approval of the stormwater management plan, then before doing so, the Applicant shall resubmit the stormwater management plan to verify that no condition has changed within the watershed that would affect the feasibility or effectiveness of the previously approved stormwater management controls. Further, if for any reason development activities are suspended for two (2) years or more, then the same requirement for resubmission of the stormwater management plan shall apply.

Section 1104. Stormwater Management Plan Modifications.

A. If the request for a plan modification is initiated before construction begins, the stormwater management plan must be resubmitted and reviewed according to the procedures contained in Section 902 above.

B. If the request for a plan modification is initiated after construction is underway, the Township Engineer shall recommend approval or disapproval of the modification based upon a field inspection provided: (1) the requested changes in stormwater controls do not result in any modifications to other approved Township land use/development requirements (e.g. building setback, yards, etc.) and (2) the performance standards in Articles 3, 4 and 5 of this Ordinance are met. Notification of the Township Engineer's action shall be sent to the Township, which may approve or disapprove the plan modification or issue a stay of the plan modification within fourteen (14) days and require the Applicant or Developer to resubmit the plan modification for a full stormwater plan review in accordance with Section 902 above.

ARTICLE 12

FINANCIAL GUARANTEES AND DEDICATION OF PUBLIC IMPROVEMENTS

Section 1201. Financial Guarantee for Completion of Improvements.

A. Guarantee of Completion of Improvements:

1. No subdivision or land development plan shall be finally approved unless the Applicant or Developer shall deposit with the Township financial security in an amount sufficient to cover the stormwater management system improvements required by the plans to be approved for the subdivision or land development.

2. Without limitation as to other types of financial security that the Township may approve, which approval shall not be unreasonably withheld, Federal and Commonwealth chartered lending institution irrevocable letters of credit and restrictive or escrow accounts in such lending institutions shall be deemed acceptable financial security for the purposes of this Ordinance.

3. Such financial security shall be posted with a Federal or Commonwealth chartered lending institution chosen by the party posting the financial security, provided said lending institution is authorized to conduct such business within the Commonwealth of Pennsylvania.

4. Such financial security shall provide for and secure to the public, the completion of any improvements that may be required on or before the date fixed for formal action of approval or accompanying agreement for completion of the improvements.

5. The amount of financial security to be posted for the completion of the required improvements shall be equal to one hundred ten percent (110%) of the cost of completion estimated as of ninety (90) days following the date scheduled for completion by the Applicant or Developer. Annually the Township may adjust the amount of the financial security by comparing the actual cost of the improvements that have been completed and the estimated cost for the remaining improvements as of the expiration of the ninetieth (90^{th}) day after either the original date scheduled for completion or a rescheduled date of completion. Subsequent to said adjustment, the Township may require the Applicant or Developer to post additional security in order to assure that the financial security equals said one hundred ten percent (110%). Any additional security shall be posted by the Applicant or Developer in accordance with this subsection.

6. The amount of financial security required shall be based upon an estimate of the cost of completion of the required improvements, submitted by the Applicant or Developer and prepared by a professional engineer licensed as such in the Commonwealth of Pennsylvania and certified by such engineer to a fair and reasonable estimate of such cost. The Township, upon the recommendation of the Township Engineer, may refuse to accept such estimate for good cause shown. If the Applicant or Developer and the Township are unable to agree upon an estimate, then the estimate shall be recalculated and recertified by another professional engineer licensed as such in the Commonwealth of Pennsylvania and chosen mutually by the Township and the Applicant or Developer. The estimate certified by the third (3^{rd}) engineer shall be presumed fair and reasonable and shall be the final estimate. In the event that the third (3^{rd}) engineer is chosen, fees for the services of said engineer shall be paid equally by the Township and the Applicant or Developer.

7. If the party posting the financial security requires more than one (1) year from the date of posting of the financial security to complete the required improvements, the amount of the financial security may be increased by an additional ten percent (10%) for each one (1) year period beyond the first anniversary date from posting of financial security or to an amount not exceeding one hundred ten percent (110%) of the cost of completing the required improvements as reestablished on or about the expiration of the preceding one (1) year period by using the above bidding procedure.

8. As the work of installing the required improvements proceeds, the party posting the financial security may request the Township to release or authorize the release, from time to time, of such portions of the financial security necessary for payment to the contractor or contractors performing the work. Any such requests shall be in writing addressed to the Township, and the Township shall have forty-five (45) days from receipt of such request within which to allow the Township Engineer to certify, in writing, to the Township that such portion of the work upon the improvements has been completed in accordance with the approved plans and specifications. Upon such certification, the Township shall authorize release by

the lending institution of an amount as estimated by the Township Engineer as fairly representing the value of the improvements completed or, if the Township fails to act within said forty-five (45) day period, the Township shall be deemed to have approved the release of funds as requested. The Township may, prior to final release at the time of completion and certification by the Township Engineer, require retention of ten percent (10%) of the estimated cost of the aforesaid improvements.

B. Release from Improvement Financial Security:

1. When the Applicant or Developer has completed all of the necessary and appropriate improvements, the Applicant or Developer shall notify the Township, in writing, by certified or registered mail, of the completion of the aforementioned improvements and shall send a copy thereof to the Township Engineer. Said notice shall be accompanied by a certification by a professional engineer licensed as such in the Commonwealth of Pennsylvania certifying that all improvements have been completed in accordance with the approved plans and specifications. The Township shall, within ten (10) days after the receipt of such notice, direct and authorize the Township Engineer to inspect all of the aforesaid improvements. The Township Engineer shall, thereupon, file a report in writing, with the Township, and shall promptly mail a copy of same to the Applicant or Developer by certified or registered mail. The report shall be made and mailed with thirty (30) days after receipt by the Township Engineer of the aforesaid authorization from the Township; said report shall be detailed and shall indicate approval or rejection of said improvements, either in whole or in part, and if said improvements, or any portion thereof, shall not be approved or shall be rejected by the Township Engineer, said report shall contain a statement of reasons for such nonapproval or rejection.

2. The Township shall notify the Applicant or Developer, within fifteen (15) days of receipt of the Township Engineer's report, in writing, by certified or registered mail of the action of said Township with relation thereto.

3. If the Township or the Township Engineer fails to comply with the time limitation provision contained herein, all improvements will be deemed to have been approved and the Applicant or Developer shall be released from any liability pursuant to its performance security agreement.

4. If any portion of the said improvements shall not be approved or shall be rejected by the Township, the Applicant or Developer shall proceed to complete the same and, upon completion, the same procedure of notification, as outlined herein, shall be followed.

Section 1202. Dedication of Public Improvements.

A. When stormwater management facilities in the Development have been completed in accordance with the final approved plan, such improvements shall be deemed private until such time as they have been offered for dedication to the Township and accepted by separate ordinance or resolution or until they have been condemned for use as a public facility.

B. Prior to acceptance of any improvements or facilities, the Township Engineer shall inspect them to ensure that they are constructed in accordance with the approved plan and are functioning properly. In the case of any stormwater control facility, it must be free of sediment and debris.

C. The Developer shall submit as-built plans for all facilities proposed for dedication.

D. Prior to acceptance of any improvements or facilities, the Township may require the applicant to provide a financial security to secure the structural integrity and functioning of the improvements or facilities in accordance with the design and specifications as depicted on the final plans. The security shall: (1) be in the form of cash, Federal or Commonwealth chartered lending institution restrictive or escrow accounts or irrevocable letters of credit in such lending institution or other negotiable securities acceptable to the Township; (2) be for a term of eighteen (18) months; and (3) be in an amount equal to twenty-five (25) percent of the actual cost of the improvements and facilities so dedicated.

ARTICLE 13

EROSION AND SEDIMENTATION CONTROLS

A. Whenever the vegetation and topography are to be disturbed, such activity must be in conformance with the provisions of Part 5, "General Design Principles", Section 507, "Erosion and Sediment Control", of Township Ordinance No. 8-15-91, "Frankstown Township Subdivision and Land Development Ordinance"; Chapter 102, Title 25, Rules and Regulations, Part I, Commonwealth of Pennsylvania, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article II, Water Resources, Chapter 102, "Erosion Control"; the standards and guidelines of the Conservation District; and the criteria set forth in this Article.

B. Lot grading for each development site shall conform to the provisions of Part 5, "General Design Principles", Section 506, "Lot Grading for Subdivisions and Land Development", of Township Ordinance No. 8-15-91, "Frankstown Township Subdivision and Land Development Ordinance", as amended to date.

C. Prior to the approval of a stormwater management plan proposing any earthmoving activity in excess of five thousand (5,000) square feet within the Township, an erosion and sedimentation control plan must be submitted to and approved by the Conservation

District. For sites involving five (5) or more acres of land and sites involving one (1) to less than five (5) acres of land and having a point discharge to the waters of the Commonwealth, an appropriate National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges from Construction or an earth disturbance permit must be obtained from the Conservation District and/or the Pennsylvania DEP. The Applicant or Developer shall pay all fees for review of the erosion and sedimentation plan directly to the Conservation District. Any Applicant or Developer requiring the complete explanation of the Conservation District's charges for plan reviews shall contact the Conservation District.

D. Additional erosion and sedimentation control design standards and criteria that must be applied where recharge or water quality BMP's are proposed include the following:

1. Areas proposed for these BMP's shall be protected from sedimentation and compaction during the construction phase, so as to maintain their maximum infiltration capacity.

2. These BMP's shall not be constructed nor receive runoff until the entire contributory drainage area to the BMP has received final stabilization.

E. Adequate erosion protection shall be provided along all open channels and at all points of discharge.

ORDAINED AND ENACTED as an Ordinance of the Township of Frankstown, this ____th day of _____, 2015.